

CLAIMS:

1 1. A method for processing packets of data comprising the steps of:
2 receiving a packet of data;
3 storing a payload of said packet of data in a buffer;
4 reading a header of said packet of data to extract a value;
5 indexing in a table storing a list of transport control blocks using said value;
6 performing a lock operation on a transport control block in an indexed entry in
7 said table;
8 performing a read operation on said transport control block;
9 transmitting a notification to an application to read said payload, wherein said
10 notification comprises an address of said transport control block; and
11 transmitting said payload of said received packet of data to said application
12 whereby said application does not perform a lock, read, write or unlock operation on
13 said transport control block.

1 2. The method as recited in claim 1 further comprising the step of:
2 receiving an invocation of a function call from said application upon said
3 application receiving said notification to read said payload.

1 3. The method as recited in claim 1 further comprising the steps of:
2 performing a write operation on said transport control block;
3 performing an unlock operation on said transport control block; and
4 transmitting an acknowledgment to a transmitting network device.

1 4. The method as recited in claim 3 further comprising the step of:
2 transmitting an indication of a change in a size of said buffer to said
3 transmitting network device.

1 5. The method as recited in claim 1 further comprising the step of:
2 transmitting said received payload to a processor to be processed.

1 6. A computer program product embodied in a machine readable medium for
2 processing packets of data comprising the programming steps of:

3 receiving a packet of data;
4 storing a payload of said packet of data in a buffer;
5 reading a header of said packet of data to extract a value;
6 indexing in a table storing a list of transport control blocks using said value;
7 performing a lock operation on a transport control block in an indexed entry in
8 said table;
9 performing a read operation on said transport control block;
10 transmitting a notification to an application to read said payload, wherein said
11 notification comprises an address of said transport control block; and
12 transmitting said payload of said received packet of data to said application
13 whereby said application does not perform a lock, read, write or unlock operation on
14 said transport control block.

1 7. The computer program product as recited in claim 6 further comprising the
2 programming step of:

3 receiving an invocation of a function call from said application upon said
4 application receiving said notification to read said payload.

1 8. The computer program product as recited in claim 6 further comprising the
2 programming steps of:

3 performing a write operation on said transport control block;
4 performing an unlock operation on said transport control block; and
5 transmitting an acknowledgment to a transmitting network device.

1 9. The computer program product as recited in claim 8 further comprising the
2 programming step of:

3 transmitting an indication of a change in a size of said buffer to said
4 transmitting network device.

- 1 10. The computer program product as recited in claim 6, further comprising the
- 2 programming step of:
- 3 transmitting said received payload to a processor to be processed.

1 11. A system, comprising:

2 a communications adapter configured to communicate with an outside
3 network, wherein said communications adapter receives a packet of data from said
4 outside network;

5 a memory unit coupled to said communications adapter, wherein said memory
6 unit stores a table listing a plurality of transport control blocks;

7 a TCP protocol stack running on said communications adapter;

8 a TCP application running on said communications adapter;

9 wherein said TCP protocol stack is configured to perform the following
10 programming steps:

11 storing a payload of said packet of data in a buffer in said memory
12 unit;

13 reading a header of said packet of data to extract a value;

14 indexing in said table using said value;

15 performing a lock operation on a transport control block in an indexed
16 entry in said table;

17 performing a read operation on said transport control block;

18 transmitting a notification to said TCP application to read said
19 payload, wherein said notification comprises an address of said transport control
20 block; and

21 transmitting said payload of said received packet of data to said TCP
22 application whereby said TCP application does not perform a lock, read, write or
23 unlock operation on said transport control block.

1 12. The system as recited in claim 11, wherein said TCP protocol stack is further
2 configured to perform the following programming step

3 receiving an invocation of a function call from said TCP application upon said
4 TCP application receiving said notification to read said payload.

1. 13. The system as recited in claim 11, wherein said TCP protocol stack is further
2 configured to perform the following programming steps:

3 performing a write operation on said transport control block;
4 performing an unlock operation on said transport control block; and
5 transmitting an acknowledgment to a transmitting network device.

1 14. The system as recited in claim 13, wherein said TCP protocol stack is further
2 configured to perform the following programming step:

3 transmitting an indication of a change in a size of said buffer to said
4 transmitting network device.

1 15. The system as recited in claim 11 further comprising:

2 a processor coupled to communications adapter;

3 wherein said TCP application is configured to perform the following
4 programming step:

5 transmitting said received payload to said processor to be processed.